Sea Trial Process
for
Assault Pre-ATRB

Process of Innovation…
concept development, rapid prototyping, coordinated experimentation

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AIR 5.0E
8 Apr 2004

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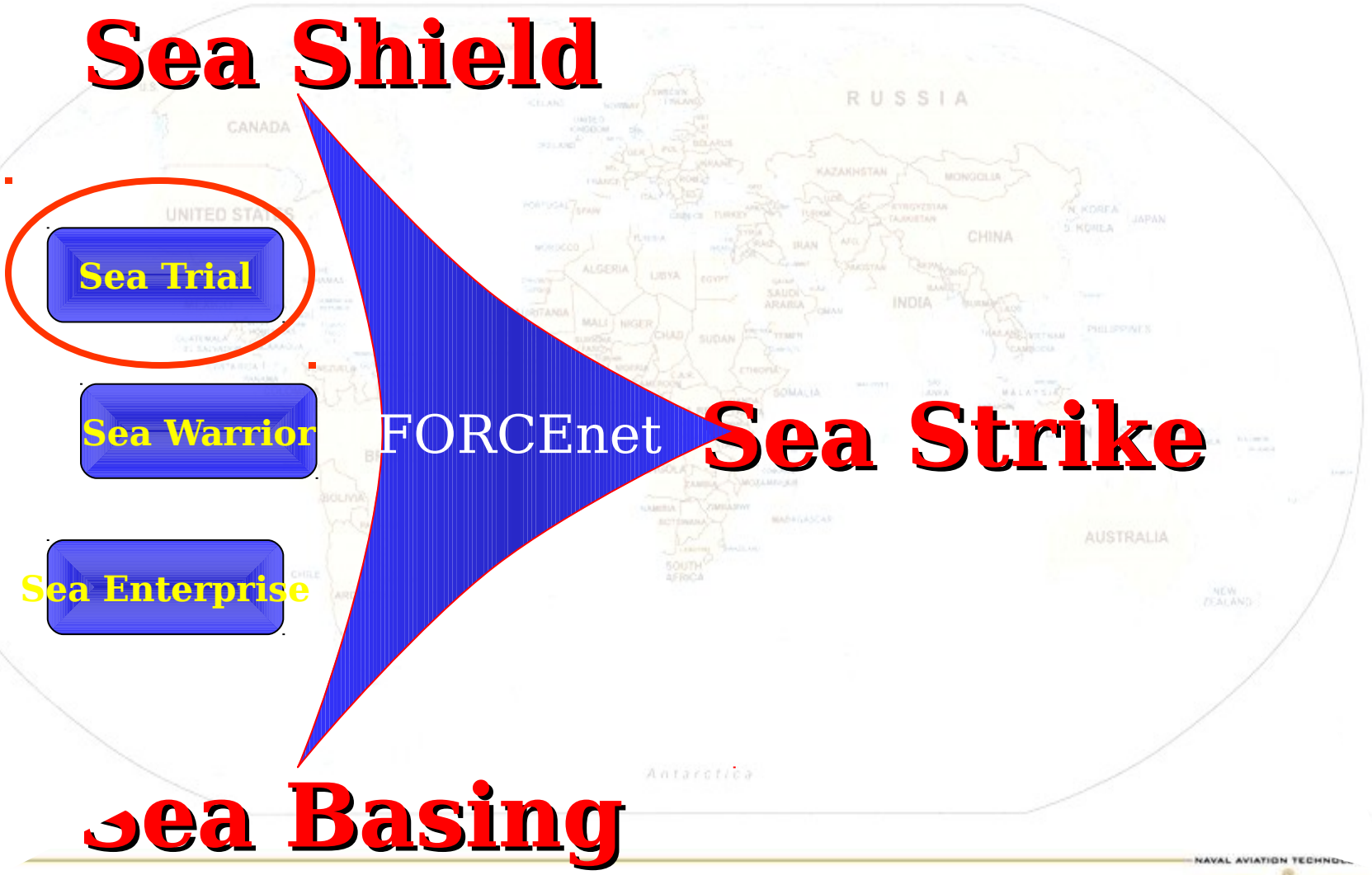
Purpose

- Increase Awareness of Sea Trial
- Identify Common Goals
- Determine the Future Relationship between ATRB and Sea Trial
- **Populate STIMS Data Base**

SEA POWER 21


Sea Shield
Sea Trial
Sea Warrior
Sea Enterprise
FORCEnet
Sea Strike
Sea Basing

SEA TRIAL

Process of Innovation…
concept development, rapid prototyping, coordinated experimentation

- ***Integrate concept and technology development***
  - **Defined ownership of concepts**
  - **Targeted wargames, experiments and exercises**
  - **Focused developmental investment**
- ***Fleet leadership***
  - **CFFC oversight**
  - **Fleet sponsors & co-sponsors**
  - **Spearhead elements to deploy & validate**
- ***Enduring process of innovation to accelerate enhanced capabilities to the***

SYSCOM's Formal Role

(CFFC INST 3900.1A, 22 Dec 03)

- **Ensure Appropriate R&D, Experimental, and Spiral Development Activities Included**
- Support All Sea Trial Activity in Coordination With NWDC
- Provide Representation to FCTs As Assigned
- Provide Input to CFFC on the Capability to Evaluate the Concepts Under Development With Particular Focus in Meeting MCP Identified Gaps

Advantages of Participating

- Ensures Alignment with Sea Power 21 capabilities development
- Direct & Early Involvement / Endorsement by:
  - User (CFFC and Numbered FLEET),
  - Sponsor (OPNAV)
  - Provider (SYSCOM)
- Warfare Sponsors (OPNAV) involvement
  - Early commitment to funding
  - Facilitates transition to program of record
- Ensures Appropriate Budget Planning/Prioritization
  - Successes endorsed by FLEET, supported in POM
  - Failures not supported, avoid investing in wrong direction

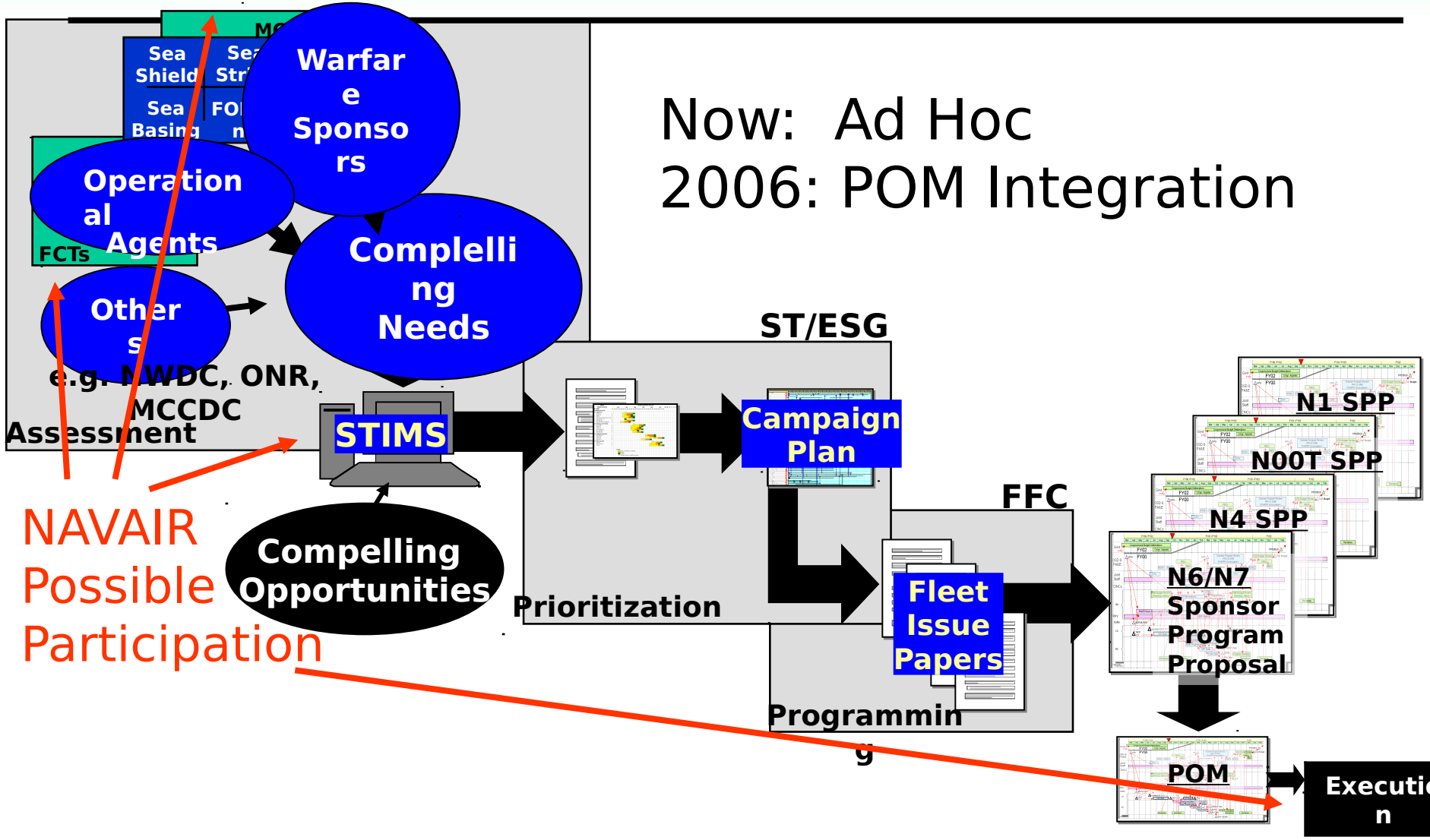
Integrate Concept and Technology Development

Advantages of Participating (Cont.)

- FLEET Experimentation facilitates early development of CONOPS/System Performance Requirements
- Doctrine, Tactics and Technical Documentation (manuals / repair procedures) can be developed as part of initial development
- Lessons learned in FLEET environment can be used to modify / correct real deficiencies early
- Decrease development time through risk mitigation

Accelerate Enhanced Capabilities to the Fleet

Who Pays?

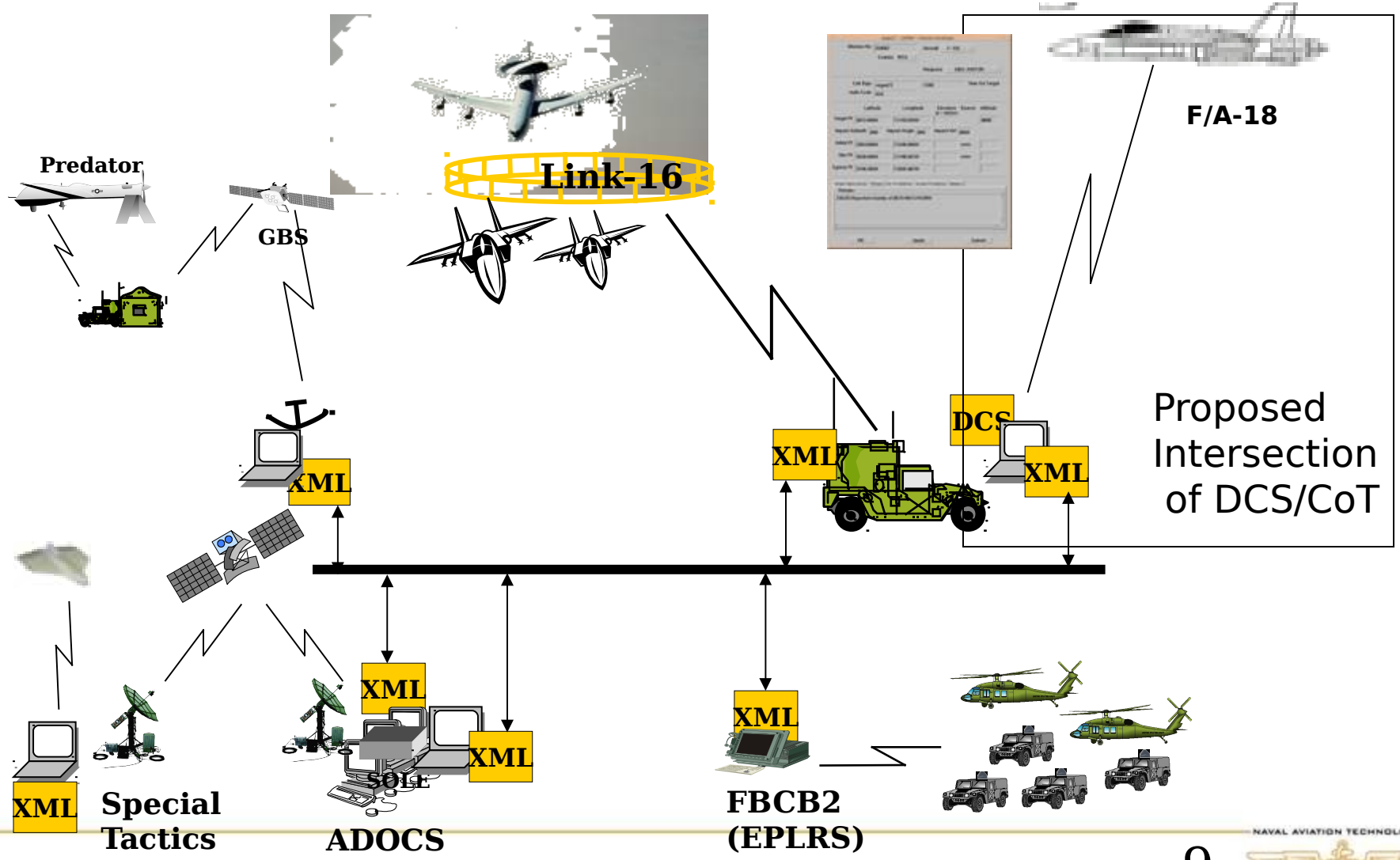


Now: Ad Hoc
2006: POM Integration

GOAL: 15-25M/year per pillar from N6/N7 for warfighting experimentation

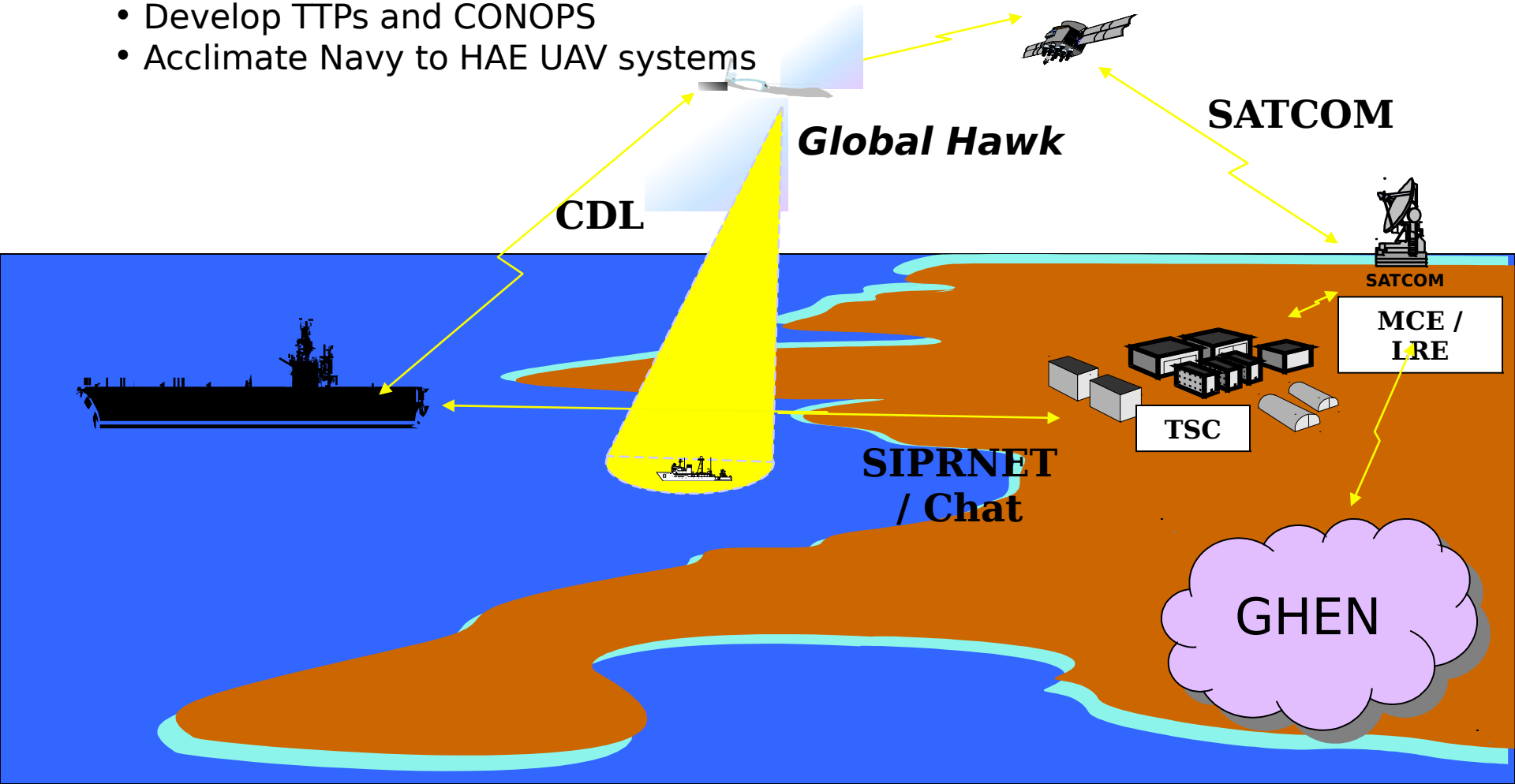
Digital TST example

Leverage existing technologies to deliver digital TST information (like USAF Machine to Machine Targeting (M2MT)) to the F/A-18 in the near term



Global Hawk Maritime Demonstration

- Through ***Sea Trial*** determine the "art of the possible"
  - Characterize safety and performance issues
  - Extensive wargame participation
    (FBE-M, Major Navy Ex, JTFEX, Tandem Thrust)
- Purposes:
  - Develop TTPs and CONOPS
  - Acclimate Navy to HAE UAV systems



Sea Trial Integrated Management System

- **Purpose**
  - Enterprise-Wide Situational Awareness (Visibility, Tracking)
    - Decision Support Tool for CFFC, STESG, OAs, FCTs
  - Enable alignment of Experimentation to priorities/gaps
  - Maximize Investments, Reduce Duplicative Efforts
  - Recognize Technology Opportunities
- **Types of Entries *("Anything That Contributes To the Realization of Sea Power 21 and Its Subordinate Pillars")***
  - Initiative/Proposal (Seeking CFFC Approval)
  - Event/Scheduled Venues (Exercise, Wargame, LTE, LOE, M&S)
  - **Project (prototyping, TAC D&E, S&T, FNC, R&D)**
- **Methods of Entry**
  - Direct via SIPRNET Web Site
  - Indirect using Word Document Template via E-mail

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What Goes Into STIMS

- Projects/Programs that do or will need/want:
  - Fleet Assets (Mandatory)
  - Fleet Inputs (CONOPS/Requirements)
  - Fleet Awareness (Future Planning, Capability Gap Analysis)
  - Fleet Endorsement (Budget Prioritization)
  - To Leverage Existing Exercises/Experiments to Reduce Cost and/or Achieve Objectives in a Realistic/Joint Environment

Recommendations

- **Expand ATRB charter to assess applicability of Sea Trial to Technologies initiatives that are rated supported/endorsed**
- **Mandatory submission of these technologies as Sea Trial Initiative proposals to NWDC via Sea Trial Information Management System (STIMS)**
- **Potential new ATRB Participants:**
  - **NWDC**
  - **FLEET (CFFC, 2nd Flt, 3rd Flt)**
  - **CNAF (N8 - Warfare Requirements)**

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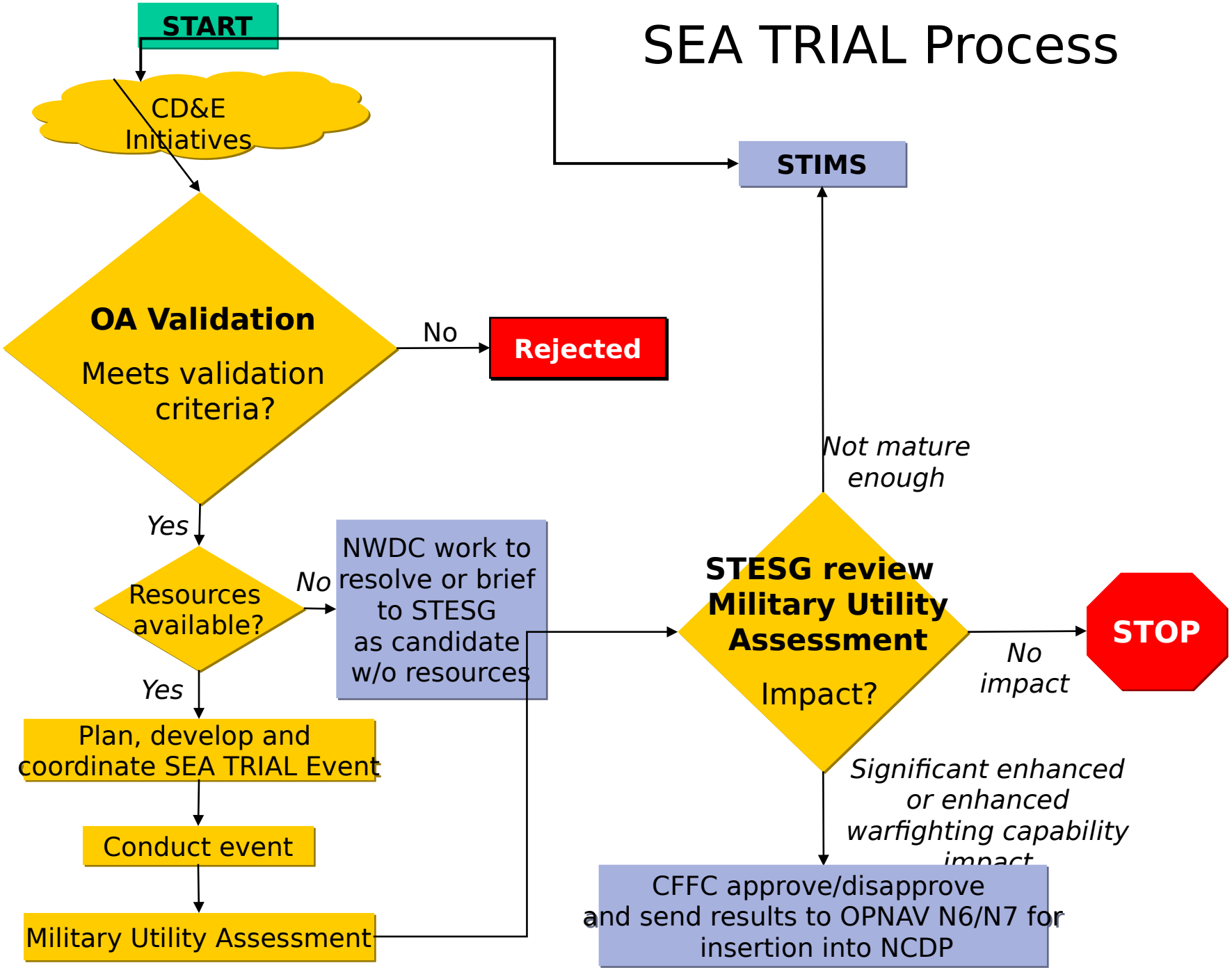
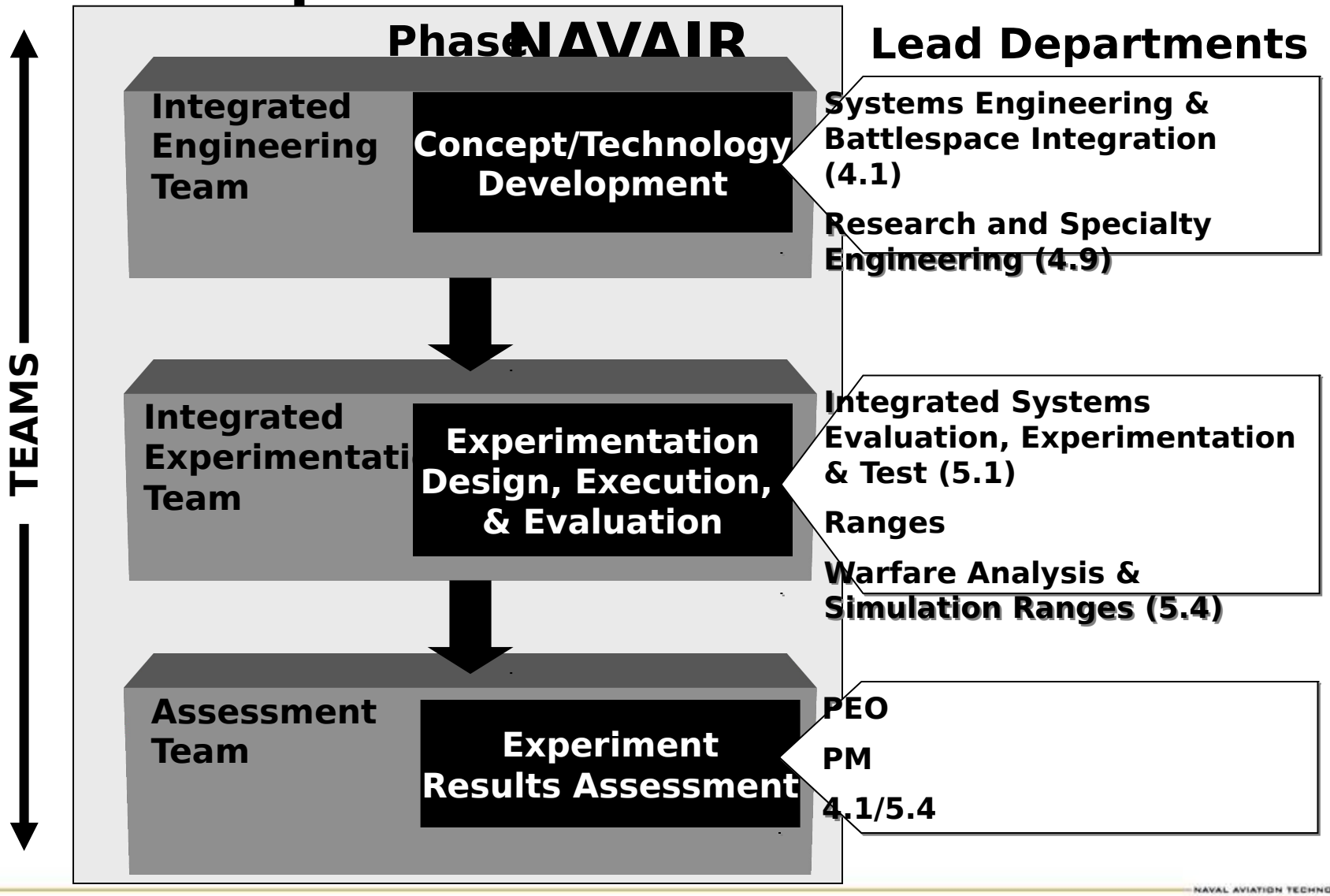
Back-ups

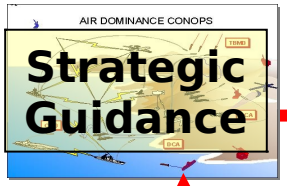
SEA TRIAL Process

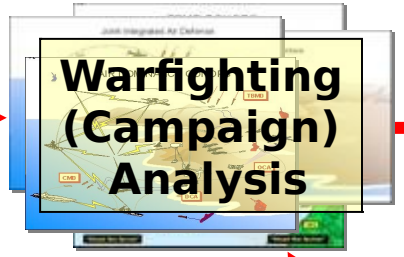


Experimentation Roles in NAVAIR



Naval Capabilites Development Process

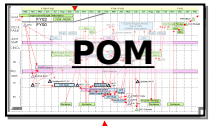


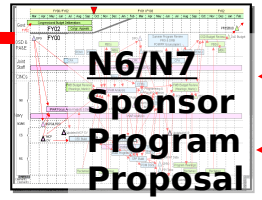


Force Capability Metrics

SYSCOM Assessments

Mission Area Analysis





Manpower Readiness Infrastructure

Sea Trial

Transformation Roadmap

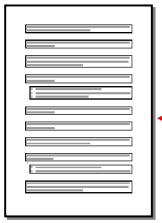
MCPs

Sea Shield | Sea Strike | Sea Basing | FORCE-net

Naval Capability Pillars

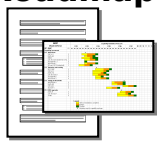
S & T Assessment

Program Guidance

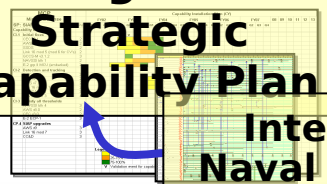


Sea Enterprise

Investment Strategy



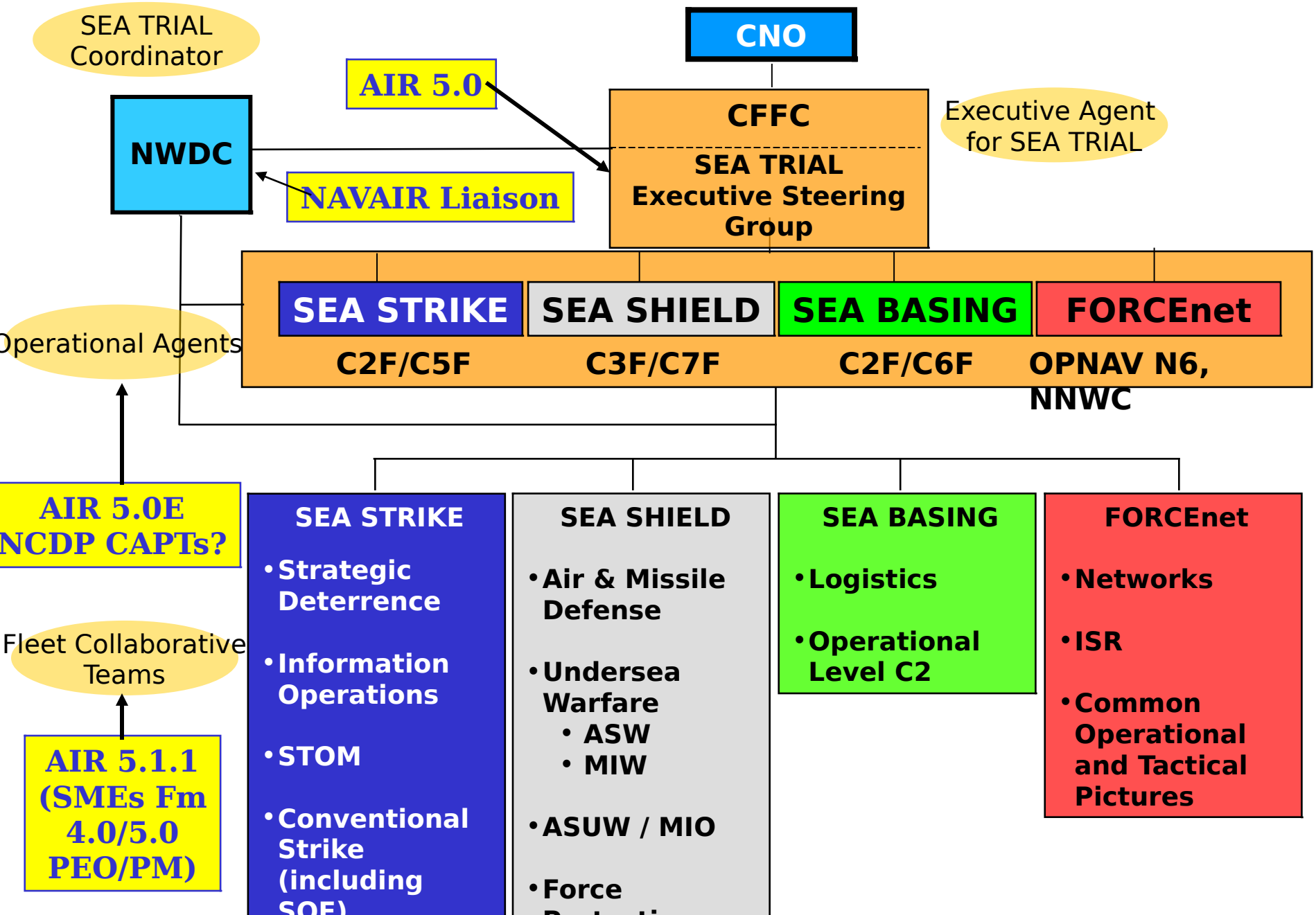
Integrated Strategic Capability Plan



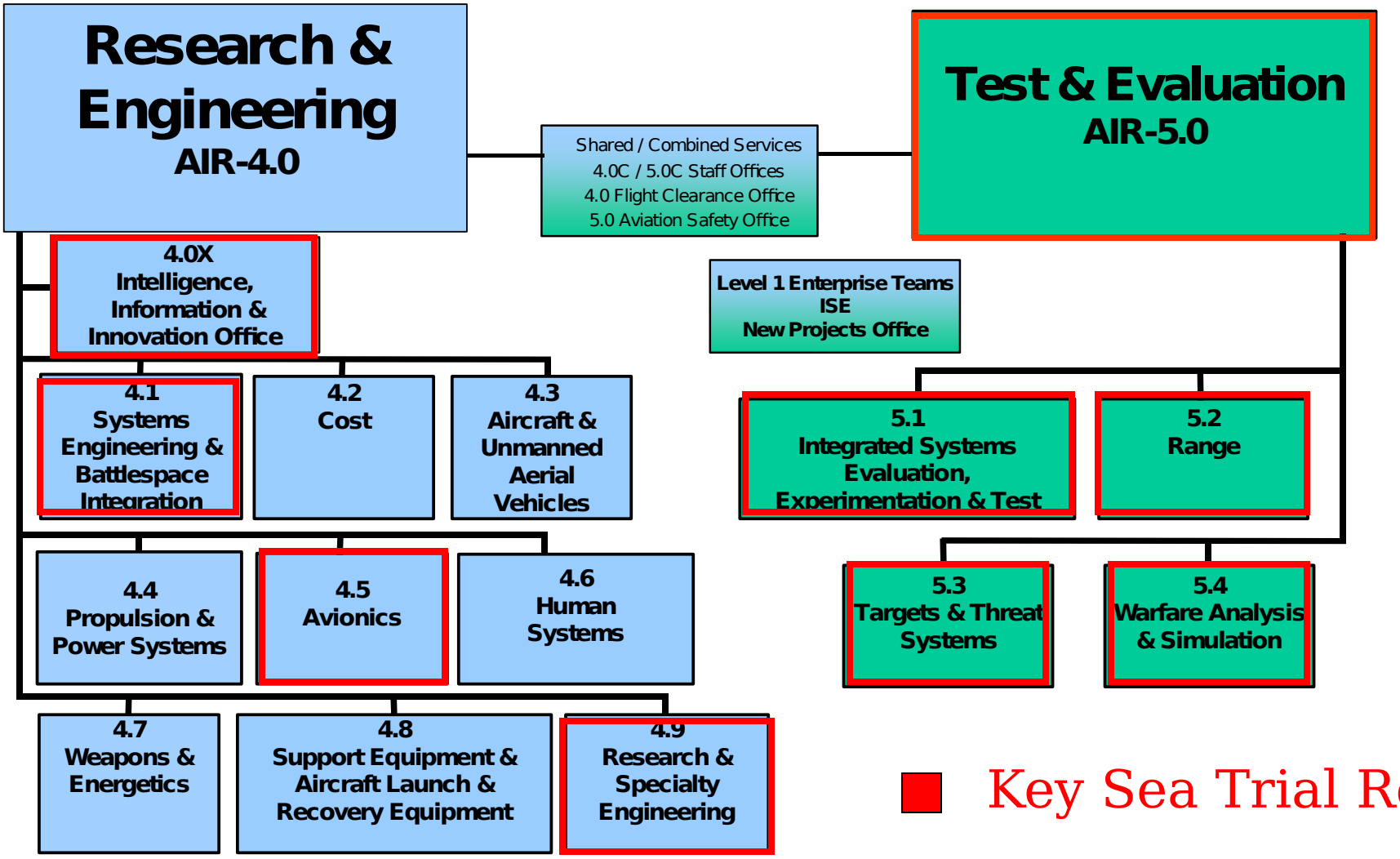
Integrated Naval Platform Plan

Force Structure & Ordnance Assessment

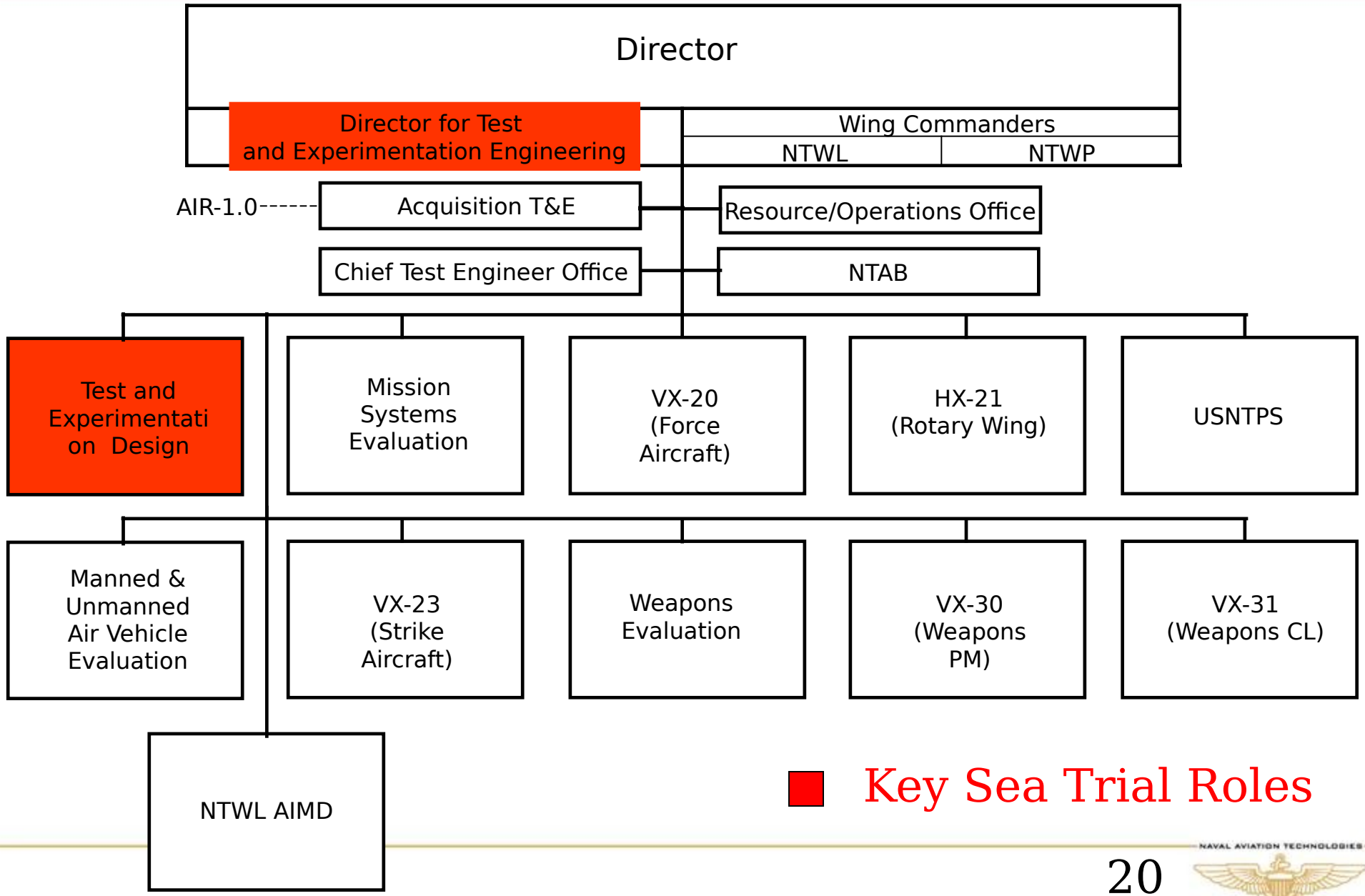
SEA TRIAL Organization



PROPOSED AIR-4.0 / AIR-5.0 ORGANIZATIONS



5.1 INTEGRATED SYSTEMS EVALUATION, EXPERIMENTATION & TEST DEPARTMENT



Sea Trial Executive Steering Group

- Membership:
  - **CPF, CNE, DCNO (N6/N7), CNR, CNWDC, CG MCCDC (DC, CD), C2F, C3F, CNNWC, Marine Corps Operational Forces (MFL, MFP - as designated by CG MCCDC) to address Naval issues**
  - **Advisory Members – Each SYSCOM Commander, COMOPTEVFOR**
- Responsibilities:
  - **Approve the Sea Trial Execution Plan**
  - **Resolve Issues of Resources/priorities**
  - **Assess Non-traditional Solutions to Ongoing Warfighting Development Issues**
  - **Validate Recently Completed Military Utility Assessments**
  - **Make Recommendations to CFFC on the Viability of Emergent Concepts and Technologies to Include Fleet Input to NCDP**

Operational Agents

- C2F (Strike/Basing), C3F (Shield) and NNWC (FORCEnet) Primary OAs
- Overall Prioritization and Coordination of All Aspects of Warfighting CD&E Within Their Respective Pillar Areas
- Validate Proposed Sea Trial Initiatives
- Oversee the Planning, Coordination and Conduct of Sea Trial Events
- Brief **Military Utility Assessment** Results to the STESG

Supported by **FCTs** and NWDC

Fleet Collaborative Teams

- **Chartered by CFFC – organized along Mission Capability Package lines under Naval Capability Pillars**
- **Report to Operational Agents**
- **Develop Sea Power 21 Operating Concepts**
- **Provide subject matter experts**
- **Develop SEA TRIAL Execution Plans**
- **Oversee implementation of approved/funded activities in the SEA TRIAL Execution Plan (ExPlan)**
- **Ensure SEA TRIAL Events properly planned/scheduled**
- **Review Military Utility Assessments**
- **Participate in TACMEMO and TTP development**

FCT Members

- OAs
  - C2F, C3F, NNWC
- WCOEs
  - NSAWC, SWDG, CMWC, SUBDEVRON 12, et al
- Fleets
  - CFFC, CPF
- Consulting Members
  - SYSCOMs, TYCOMs, PEOs

NCPs and Fleet Collaborative Teams

Sea Shield ***C3F***	**Sea Strike** ***C2F***	**Sea Basing** ***C2F***	**FORCEnet** ***CNWC***
AT/FP – *FFC N9*	Strike - *NSAWC*	Deploy and Employ – *C2F*	Comms/Data Networks – *NNWC*
SUW - *SWDG*	NFS – *SWDG*	Integrated JT Log – *FFC N41*	ISR – *FFC N2*
USW – *CPF (N00ASW)*	Strat Deterrence – *CSF*	PrePo JT Assets Afloat – *C2F*	Common OP and Tactical Picture - *NNWC*

FCT NCDP Focus

- Assess OPNAV Campaign Analysis
- Naval Campaign Lessons Learned
- SA With FCBs, Support JWCA Process
- Support OAs in CONOPS Development
- Participate in FNC IPTs
- Requirements Document Review (ICD, CDD, CPD)
- Annual CNO Guidance

Leverage Fleet Expertise,
Affect NCDP with Fleet Requirements

FCT Sea Trial Focus

- Develop Sea Power 21 Operating Concepts
- Provide SMEs for Concept Development, MCP IPTs, MUAs, LOEs, etc.
- Develop Sea Trial Execution Plans
- Participant in TACMEMO and TTP Development

Assist Sea Trial Operational Agents, Develop SP 21 Concepts, Experimentation Plan, and Doctrine

Sea Trial Tools

- **Sea Trial Concept Development and Experimentation (CD&E) Plan**
  - Focused 10 Years and Out
  - Establishes Metrics
  - Integrate Studies, War Games, Experimentation, and Exercises
- **Sea Trial Execution Plan**
  - Events for Next Two Years
  - Approved by STESG Each June
- **STIMS**

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Sea Trial Concept Development and Experimentation (CD&E) Plan

- Focused 10 Years and Out
- Establishes Metrics to Assist the OAs in Determining Applicability of Their Sea Trial Efforts and Allow STESG to Measure Overall Sea Trial Progress
- Implement a Comprehensive Sea Trial Roadmap That Integrates Studies, War Games, Experimentation, and Exercises With Proposed Evaluation Metrics

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Sea Trial Execution Plan

- Collection of OA Planned Sea Trial Events (Synchronized Across NCPS) for Next Two Years
- Contains Evaluation Metrics and Execution Timeline
- Presented to STESG by NWDC for Approval Each June
- Changes to the Execution Plan Subsequent to STESG Approval Will Be Briefed to STESG by OA

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Test vs. Experiment

- **Test Event –** Measure the performance of People, Process, Technology against a known criteria (**Failure is Bad**)

- **Demonstration** – People, Processes and Technology coming together to perform a known task (**Failure is Bad**)

- **Experiment** – An objective investigation of empirical phenomena that includes one or all of: People, Process and Technology *(Requires a hypothesis)* (**Failure is OK**)

Experiment Venues

- War Game
- Limited Technical Experiment
- Limited Objective Experiment
- Field Experiments
  - May be Concurrent with Fleet/Joint Exercises
- Combination of Field and Lab
  - Fleet Battle Experiment (FBE)

Modeling & Simulation Supports All Venues

Fleet Challenges

- Funding for Sea Trial Events
- Personnel executing Sea Trial Tasks
- Fleet Collaborative Team Participation
- Buy-in from the Experimentation Community
- Framework for Actionable Results
- Responsiveness to high leverage/short notice opportunities